

## Article

# The Creation of Situated Boundary Objects in Socio-Educational Contexts for Boundary Crossing in Higher Education

Marc Fuertes-Alpiste \*, Núria Molas-Castells , Maria Jose Rubio Hurtado  and Francesc Martínez-Olmo 

Facultat d'Educació, Universitat de Barcelona, Passeig de la Vall d'Hebron, 171, 08035 Barcelona, Spain; nmolascastells@ub.edu (N.M.-C.)

\* Correspondence: marcfuertes@ub.edu

**Abstract:** There is a growing awareness of the need to develop professional skills among university students, which is related to connecting learning to real life. In order to foster this connection, teachers may carry out activities that involve crossing boundaries, using theory in the practice of the professional context. This study presents a teaching experience consisting of a collaborative inquiry-based learning activity mediated by a WebQuest. Students analysed real digital literacy or digital inclusion projects implemented by local organisations to propose improvements by means of creating a digital educational product (a boundary object). This involved a change in context from the university environment to the socio-educational and professional setting. The aim of this study is to examine the students' perception of this experience. For this purpose, a case study was conducted with a group of 39 first-year students of the bachelor's degree in Social Education of the University of Barcelona. A questionnaire was administered and the responses were analysed from the perspective of Hermans' Dialogical Self Theory and Star's boundary objects. The results show that the students perceive the activity as a bridge between the two contexts, that they view this transition positively—albeit with certain limitations—and that they consider digital technology to have facilitated boundary crossing. In conclusion, we consider that the examined experience is useful in respect to closing the gap between academic and professional skills and contributes to the theoretical foundations for learning between contexts.

**Keywords:** boundary crossing; boundary object; higher education



**Citation:** Fuertes-Alpiste, M.; Molas-Castells, N.; Rubio Hurtado, M.J.; Martínez-Olmo, F. The Creation of Situated Boundary Objects in Socio-Educational Contexts for Boundary Crossing in Higher Education. *Educ. Sci.* **2023**, *13*, 944. <https://doi.org/10.3390/educsci13090944>

Academic Editors: Giuseppe Ritella and Maria Beatrice Ligorio

Received: 24 July 2023

Revised: 12 September 2023

Accepted: 14 September 2023

Published: 16 September 2023



**Copyright:** © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

## 1. Introduction

There is a growing awareness of the need to develop professional skills among university students, which is related to connecting learning and real life. The European Higher Education Area (EHEA) represented a structural change in university education aimed at fostering the professionalisation of academic training, merging theory with practice, and enabling the identification of competencies beyond the learning of concepts, procedures and attitudes. Specifically, social education is a discipline that aims to influence the social field in order to transform and improve it, thus promoting people's wellbeing [1]. To achieve this, university programmes in social education should provide training that encompasses knowledge, abilities and skills for professional development [2,3], particularly in an increasingly changing and complex market [4], primarily through active methodologies that involve the putting into practice and learning of competencies [3]. Nevertheless, Eslava et al. [2] and Eslava [5] point out that the perception of social education students is that the training they receive does not align with the demands of professional practice. Moreover, they do not feel confident in applying the competencies that they have worked on [6].

In order to foster the connection between university education and professional practice, educators may engage in activities that involve a change in context by applying theory to the practice of the professional setting. Akkerman and Bakker [7] argue that this change

in context does not necessarily have to involve a physical change but rather it may consist of a sociocultural difference leading to discontinuity in action. This is what is known as boundary crossing, which refers to the transition between different domains when entering unfamiliar territory. The distinction between formal and informal educational contexts may be intentional, acknowledging that the informal context provides something that the formal context cannot [8]. This may be beneficial, giving students the opportunity to break away from routines and become part of a system of situated activity and community [9,10]. Since learning is a social and cultural process, it does not solely occur within the formal educational context [11]. Teaching and learning approaches based on experiences in different contexts are known as experiential learning approaches. They include internships, service-learning and cooperative education. When these approaches are well designed, they can contribute significantly to student learning and facilitate the transformation of higher education by broadening our understanding of knowledge and learning, expanding relations between the actors involved in the educational relationship, and strengthening the connections between the university and the community it serves [12].

Various research studies on experiential learning initiatives involving boundary crossing have been shown to be effective. In teacher training, for example, the collaboration of local and international NGOs has been sought for the acquisition of competencies and knowledge within these communities [11]. Meanwhile, in social education and health studies, boundary crossing activities have been implemented to enhance students' reflection during transitions between different contexts [13]. In nursing studies, it was found that both personal and environmental factors have an impact on the transition from the academic context to the professional setting [14]. Furthermore, studies have been conducted on how STEM (Science, Technology, Engineering and Mathematics) learning facilitates the crossing of boundaries in the construction of solutions to real-world problems [15].

Teaching and learning approaches that involve crossing boundaries or borders to move between different educational contexts are closely related to the concept of situated learning [16], which connects learning to the social situations in which it occurs, providing it with a contextual framework. The construction of meaning in a situated and social context involves the active participation of the learner, who moves from the periphery to the community of practice [17]. This often entails the reification or production of concrete artefacts in iterative learning processes [18]. Accordingly, one way of crossing the boundary to facilitate learning among students is through the creation of boundary objects, which are artefacts situated at the intersection of different settings [19]. These objects facilitate the crossing of boundaries and constitute negotiation spaces where dialogue takes place, since although they may have different meanings in each separate context, they share a common structure [20]. Star and Griesemer [21], who introduced the concept of boundary objects, argued that these objects are flexible, since they can be interpreted differently by different people, and that they have a loosely defined organisational structure when shared across contexts but possess a defined structure when viewed within a specific context [22]. These objects involve the periphery but, above all, they provide a shared space between contexts [23], enabling the processes of identification, coordination, reflection and transformation in learning, which facilitate continuity in boundary crossing [7].

Inquiry-based learning (IBL) approaches are closely related to those of situated learning. The term encompasses several proposals that share the common denominator of active learning, in which learning activities are designed to engage students in an inquiry process to address cases or problems that are solved collaboratively using digital technologies [24]. IBL anchors the learning process in a valuable and meaningful context for students, as well as providing a sequence of activities that first generate motivation and then provide tools for students to investigate, accompanied by scaffolding strategies to support the inquiry process [25]. This approach is related to problem-based learning, case-based learning, project-based learning and WebQuests. WebQuests are guided activities which, on the basis of web resources and a task structured around a central open-ended question, encourage students to investigate and engage in individual and group work in order to

turn information into more complex knowledge [26]. WebQuests typically follow a defined structure: introduction, task, process, evaluation, conclusion and instructional guide.

This study presents an experience comprising an IBL activity in the form of a WebQuest, which involves the collaborative creation of a boundary object. This combination facilitates the interaction between the academic sphere and professional practice. Specifically, first-year students of the bachelor's degree in Social Education were tasked with designing a digital educational product (boundary object) that could potentially be applied in a real-world context. The creation of a scenario in which undergraduate students can develop a boundary object enables the integration of their experiential learning, their theoretical knowledge and their representation of professional knowledge. This approach guides the learner towards inquiry-based practices in the professional context, in such a way as to create new perspectives, conceptions and strategies during the training process through self-regulated learning [27].

The experience of approaching the professional setting at the early training stage enables a change in context between academia and professional practice, which entails modifications in the development of the student's identity. As with all transitions between contexts, the tension generated in the process of change facilitates the emergence of new roles and personal perspectives that require a negotiation or re-negotiation of the self. This is what the Dialogical Self Theory describes as the need to adopt multiple positions of the self or "I-positions". From this perspective, identity is the result of dialogue between different positions, both individually and in relation to others [28]. Each position involves conceptions, strategies and feelings that are activated according to the context [29].

According to Hermans [28], I-positions may be individual or social and may coincide with others, generating shared positions. Internal (monological) and external (dialogical) positions are distinguished. In the former case, individuals assume and attribute positions to themselves based on the context in which they are situated, such as "I as a student" or "I as a mother". Conversely, dialogical positions refer to other individuals or collectives in relation to oneself, such as "my mentor" and "my sister", or "my classmates" and "my basketball team". Finally, the process of dialogue between positions also facilitates the emergence of meta-positions, which enable reflection on other positions, and promoter-positions, which involve driving the development of other positions. In order to support the transition between educational and professional contexts, we use Paavola and Hakkarainen's [30] Trialogical Learning Approach (TLA), which refers to the collaborative creation of artefacts shared between different contexts by students, functioning as a third space between the individual student and the collective. In this case, the boundary object is represented through the task associated with the WebQuest. In all cases, the different positions establish a relationship of dialogue that allows the person to maintain a certain unity and sense of coherence regarding the self in different moments and contexts [28].

If a person's identity is shaped and transformed through dialogue between different positions, it is coherent to consider that changes in educational context will necessarily entail processes leading to the reconfiguration of positions and, therefore, changes in the self. In the case of transitioning between academia and professional practice, identity changes not only encompass the activation of one position or another, depending on the context ("I as a student" and "I as a professional"), but also modifications in the system that shapes identity and the structure of the self [31].

As a general objective, this study aims to understand students' perception of the experience of creating a boundary object within the context of a bachelor's degree subject, as well as the changes that occur in their learning perspectives by carrying out this activity. The study aims to achieve two specific objectives: to identify the self positions adopted by students in relation to carrying out the activity (the WebQuest), and to understand students' perceptions of the WebQuest as a boundary object between university and professional practice.

## 2. Materials and Methods

### 2.1. Description of the Activity

The activity of creating a boundary object guided by the WebQuest was carried out during the 2022–2023 academic year as part of the subject “Uses, Possibilities and Limits of ICT” of the bachelor’s degree in Social Education of the University of Barcelona. The goals of the activity included familiarising students with concepts related to digital inclusion, analysing a real socio-educational setting and designing a functional prototype that would provide a techno-educational response to the challenges identified in a specific context. Nine two-hour sessions were allocated for the activity, and students worked in groups of five, following the established work phases of the WebQuest. To begin with, a guided reading was conducted of two academic articles through which the students could familiarise themselves with part of the literature related to digital inclusion, as well as the key concepts on the topic. Having completed this activity, each group independently searched for and contacted a socio-educational organisation or project, subsequently drawing up a brief diagnosis containing a description of the basic features of the context and an analysis of the digital inclusion training actions of the centre. Based on the diagnosis, each team identified and prioritised challenges or deficiencies in order to design a specific educational proposal to improve a digital inclusion action of the organisation. In the final work phase, each group publicly presented the process followed and the prototype developed. All the information related to the WebQuest is available at the following link: <https://tinyurl.com/3naxs933> (accessed on 12 September 2023).

### 2.2. Design of the Research

An ad hoc questionnaire (see Supplementary Materials) was prepared, consisting of 26 substantive questions in various formats: five-point rating scale questions (1 = strongly disagree, 5 = strongly agree), categorical questions and open-ended questions, and three sociodemographic questions in order to describe the sample. The questionnaire was designed based on the framework of Hermans’ Dialogical Self Theory and the concept of boundary objects, and it was structured around three dimensions: transitions between the academic and professional settings, the connection between theory and practice through ICT (WebQuests) and the three positions of the self (monological, dialogical and trialogical).

### 2.3. Description of the Sample

The study was conducted with two groups, each consisting of 29 students. The sample was selected for convenience and accessibility, with the intention of gathering information from a formal education setting. All of the students participated in the designed teaching-learning activity. They were invited to respond anonymously and were not compensated for taking part or penalised for not doing so. Finally, 39 students provided their feedback on the activity, of whom 29 (74.4%) were women and 9 (23.1%) were men. One student (2.6%) did not answer this question. The mean age was 19.41 years (SD = 1.74). Regarding employment status, 15 (38.5%) were employed in a field unrelated to social education, 12 (30.8%) were employed in a field related to social education and 12 (30.8%) were not employed.

### 2.4. Analysis Techniques

The questionnaire items have been analysed using descriptive statistics. For questions with scalar values, the minimum and maximum scores have been calculated. Given that the sample size exceeds 30 cases, the mean was calculated as a measure of central tendency, and the standard deviation was calculated as a measure of dispersion.

Additionally, in order to determine if the results would vary based on sociodemographic characteristics (gender and employment status), and since segmenting the sample resulted in subgroups with fewer than 30 cases, non-parametric comparison tests (Mann–Whitney U and Kruskal–Wallis H) were applied. Rank-biserial correlations ( $r_{rb}$ ) were

calculated as values of effect size (ES) in all comparison tests to interpret the magnitude of the differences found [32].

The analyses were conducted using SPSS (Statistics Package for Social Sciences) (version 27) [33] and the JAMOVI statistics package (version 2.3) [34].

### 2.5. Rigour Criteria and Ethical Considerations

The entire study was carried out ensuring the criteria of scientific rigour [35]. We aimed to achieve internal validity through a research design appropriate to the intended objectives. Nevertheless, we acknowledge that the percentage of students who did not respond to the questionnaire (33%) may have introduced unforeseen extraneous variables. The design of the research and, specifically, of the teaching-learning activity (WebQuest as a boundary object) is feasible and can be extrapolated to several educational contexts, thus enhancing its external validity. Additionally, the designed and administered questionnaire contains sufficient questions related to the dimensions of interest outlined in the introduction, which can be accurately answered in order to provide an appropriate level of consistency for this study. In regard to objectivity, the constructs have been defined in the introduction to ensure a shared and transparent understanding of the variables analysed.

The study complies with the aspects outlined in the Code of Conduct for Research Integrity of the University of Barcelona [36], especially regarding honesty (reporting and communicating the research in a transparent, comprehensive and unbiased manner), rigour (carefully reviewing the results), procedures (applying appropriate and referenced methods and protocols), data processing (complying with the General Data Protection Regulation) and research with students (ensuring the anonymity and voluntary participation of the students).

## 3. Results

The findings are presented below, grouped into sections corresponding to the structure of the questionnaire. Detailed scores are listed in Table 1. Unless otherwise indicated, no significant differences were found in the responses based on the participants' gender. The comparisons analysed based on employment status did not show significant differences in any of the questionnaire items.

**Table 1.** Scores in the rating scale questions.

Item	N	Min.	Max.	Mean	SD
Section 1: Transitions between the academic and professional spheres					
1. I can easily imagine the transition from undergraduate to social educator	39	1	5	3.00	1.124
2. The role that should be fulfilled by the social educator corresponds to the professional work that they end up carrying out	39	1	5	2.95	0.793
3. What we learn at university is directly related to the experiences of the labour market	39	1	4	2.72	0.916
Section 2: Bridging theory and professional practice through ICT					
4. It's important to be able to connect what we learn at university to professional practice	39	4	5	4.69	0.468
5. Through the WebQuest activity, I have integrated theoretical and practical aspects	39	3	5	4.23	0.667
6. Digital technology (such as social networks, smartphones, digital video, podcasts, cloud-based applications, virtual reality, video games, etc.) can help us relate what we learn at university to the professional sphere	39	3	5	4.28	0.560

**Table 1.** *Cont.*

Item	N	Min.	Max.	Mean	SD
Section 3a: Monological position					
7. I have been able to apply prior learning experiences or knowledge in carrying out the WebQuest	39	2	5	4.08	0.870
8. By completing the WebQuest, I have improved in professional competencies to be applied outside the university setting	39	1	5	3.64	1.063
9. The reading activity with two texts in phase 1 of the WebQuest has helped me reflect on and better understand concepts such as digital literacy, inclusion or the digital divide	39	1	5	3.85	1.014
Section 3b: Dialogical position					
10. During the work process, discussions with colleagues have been efficient	39	2	5	4.21	0.833
11. Collaboration with the colleagues in my group has been crucial in achieving the goals of the activity	39	2	5	4.28	0.916
12. Conversations with my colleagues have contributed to improving my training as a social educator	39	1	5	4.05	0.944
13. The teaching staff's mentoring has guided me in the development of the proposal	39	4	5	4.54	0.505
Section 3c: Trialogical position					
16. I feel that I've formed part of a professional work team (beyond the study team)	39	1	5	3.36	1.013
17. I've been able to relate my university work to that of the educator in the organisations	39	2	5	3.92	0.839
18. This experience within the professional sphere, has enriched my professional development	39	1	5	3.85	0.933
19. I have been able to improve my professional competencies	39	1	5	3.97	0.903
20. I've been able to get close to the professional reality of the social educator	39	2	5	3.90	0.821
21. The proposal we have created in my work group could be useful for the target organisation	39	3	5	4.56	0.598

### 3.1. Transitions

The three items that make up this dimension obtained low scores (equal to or below 3), which indicates that the students perceive the transition between university and the labour market as problematic; they do not see the transition as easy and consider that the knowledge acquired at university is not well connected to professional reality. Item 2 (the role that should be fulfilled by the social educator corresponds to the professional work that they end up carrying out) is the only one in which a significant gender-based difference was found, with a medium effect size, where the opinion of women was lower than that of men ( $U = 68.0$ ;  $p = 0.015$ ;  $ES = 0.48$ ;  $M_{\text{women}} = 2.79$ ;  $SD_{\text{women}} = 0.819$ ;  $M_{\text{men}} = 3.44$ ;  $SD_{\text{men}} = 0.527$ ).

### 3.2. Bridging Theory and Professional Practice through ICT

The items that make up this dimension have high means, indicating the importance that students attach to the connection between academic theory and professional practice, and positioning ICT in general—and WebQuests in particular—as boundary objects that can foster this connection.

### 3.3. Positions of the Self

The items of the monological position present moderate scores. The students perceive that carrying out the WebQuest has enabled them to apply knowledge acquired during their studies (with a mean score of 4) and have been able to reflect on digital literacy (with a mean score of 3.85). They also believe that the WebQuest has contributed to strengthening their professional skills, albeit to a lesser extent (with a mean score of 3.64). The “past position” is the positioning category most projected by the students, while the “professional position” is the least projected category.

The dialogical position is strengthened more than the monological one, the former being the position that obtains the highest scores. Both classmates and teachers are perceived as agents fostering the transition to professional practice. The teacher assists in carrying out the activity (item with a mean score of 4.54), while classmates help in achieving the objectives (mean score of 4.28), and in improving one’s training as a social educator (mean score of 4). In item 13 (The teaching staff’s mentoring has guided me in the development of the proposal), significant gender-based differences were found, with a medium effect size, where the opinion of women is higher than that of men ( $U = 78.5$ ;  $p = 0.041$ ;  $ES = 0.40$ ;  $M_{\text{women}} = 4.62$ ;  $SD_{\text{women}} = 0.494$ ;  $M_{\text{men}} = 4.22$ ;  $SD_{\text{men}} = 0.441$ ).

In relation to this group of items, the students were asked the following questions:

- Do you believe that you’ve been able to work with a real organisation through the WebQuest?
- Have you received feedback from the organisation’s professionals? If so, have you taken on board their considerations?

The students believe that they have collaborated with a real institution (64%), and state that they have received feedback from professionals (53%). In 56% of these cases, the students have followed the indications received.

The trialogical position presents moderately high scores overall (just under 4). The WebQuest is perceived as an activity that has contributed to strengthening the professional practice of social educators and to boosting the connection between the theoretical work carried out at university and the world of work and professional practice. However, the students perceive that they have formed part of a professional team to a lesser extent, with this item (16) receiving the lowest score (mean score of 3.36).

### 3.4. Qualitative Evaluation

To summarise the answers submitted in response to the open-ended questions, high scores were observed regarding the experience of getting close to professional reality and the experience of creating a real proposal for the labour market that is useful and feasible.

## 4. Discussion

In line with the studies published by Eslava Suanes [5] and Mora-Jauregualde et al. [6], the results of Section 1 of the questionnaire (Transitions between the academic and professional spheres) indicate that the students have issues with the transition from university to the professional sphere. Given that they are first-year undergraduates, it may be that the variable of having little experience as degree students has an impact on this perception. However, according to the results with high means in Section 2 (Bridging theory and professional practice through ICT), the participants attach great importance to this bridging and acknowledge that the WebQuest-based activity has contributed to achieving it. As mentioned above, the situated [9,10,16], active and experiential activities [12] that involve a collaborative approach and the use of technologies, as well as facilitating boundary crossing—in this case through an inquiry-based process [25]—contribute to the participants’ learning [8]. The construction of boundary objects in the form of proposals that foster digital inclusion in the collectives of the analysed organisations has enabled them to learn by means of the processes elicited by Akkerman and Bakker [7], which involve identifying boundaries between contexts, coordinating the stakeholders (students and organisations) in the construction of boundary objects and reflecting on the process

and the transformation that has occurred. These results are aligned with a similar study of Amenduni and Ligorio [20], where the designed object supported the students' shift from university to professional communities.

The changes in context not only entail the physical mobility of students but also their participation in new spaces of practice, as well as the application and learning of new competencies, and continuities and discontinuities between contexts that are not always evident to students [37]. The Dialogical Self Theory proposed by Hermans [28] has made it possible to identify the influence of context change in modifying the student's identity. In this process of context change, we must highlight the role of the promoter position performed by the teacher, the collaborative actions with peers and even the reception of feedback from professionals, which constitutes the "coordination" process identified by Akkerman and Bakker [7].

The WebQuest, understood as the third space that structures the creation of the boundary object (the triological position [30]), was perceived and valued by the students as a learning activity that contributes to strengthening the professional competence of the social educator and the connection between university and the world of work. At the same time, they are aware that the activity has not provided them with a fully immersive experience, such as the one that occurs in a Community of Practice [17]. WebQuests have a well-defined structure, since the scaffolding they provide in the boundary crossing process even helps to address the processes identified by Akkerman and Bakker [7] in the construction of boundary objects.

It is also worth highlighting that no significant gender-based differences have been found in the research study, except for two items that address the following aspects. Firstly, the relationship between what a social educator should be and what they actually do in professional practice is perceived as weaker by female students than it is by their male peers and, secondly, the female students have a more positive opinion than their male counterparts of the support received from the teacher in carrying out the task. This implies that the female students idealise the profession to a greater extent and that they perceived more assistance from the teaching staff.

## 5. Conclusions

The main objective of this research study was to discover students' perception of the experience of creating a boundary object in the context of a degree subject, as well as any changes in their learning perspectives as a result of carrying out this activity. Two specific goals were set: firstly, to identify the positions of the self (monological and dialogical) adopted by the students in relation to carrying out the activity (an inquiry-based activity in the form of a WebQuest) on the basis of Hermans' Dialogical Self Theory [28]; and, secondly, to discover students' perceptions of the WebQuest as a boundary object between university and professional practice in order to evaluate a third space (triological) position [30]. Regarding the dialogical self, the results indicate the importance of the promoter position, where both the role of the teacher and that of classmates stand out in the learning process. It would also be interesting to consider to what extent was important the role of professional institutions as community partners can have an influence as promoters, or even as role models as seen in Harfitt and Chow's study [11] or as brokers in Stoffels, van der Burgt and Bronkhorst [14]. The guided inquiry-based activity (the WebQuest), which facilitates collaborative learning and boundary crossing, was positively perceived as a bridge between university and professional practice. We believe that this result is significant, above all because it contrasts with the participants' perception that the knowledge provided by university studies is inadequate for professional practice. Such an activity combines processes and a creation of meaningful knowledge in the form of an artifact, individually and collectively. The Triological learning approach (TLA) and its design principles as stated in Paavola and Hakkarainen [38] and in Sansone and Grion [39] can inform a consistent structure of activity design and assessment that promotes students' meaningful learning.



The study presents some limitations, since it is restricted to a highly specific context of two class groups of social education undergraduates. Accordingly, it would be necessary to obtain results from students studying other degrees. Additionally, considering that the participants were first-year students, we believe that the “year of study” (or “experience as a university student”) variable may have had an impact on their perception of how well university education prepares them for the world of work. Moreover, a dialogical methodology based on narratives and qualitative research instruments could be helpful to obtain a more detailed description of the boundary crossing process as stated in Cattaruzza, Kloetzer and Iannacone [9]. Despite these limitations, we consider that the analysed activity is useful for bridging the gap between academic and professional competencies and for contributing to the theoretical foundations of learning across contexts. The carrying out of collaborative and guided inquiry-based activities involving the use of digital technology to address real and situated challenges—as is the case of the WebQuest used in this study—enables students to learn through the creation of boundary objects. These serve as a bridge between university and the professional sphere. Their use as a boundary-crossing device, under the TLA [30], may be highly beneficial in any year of undergraduate studies as a starting point for experiential learning.

We believe that the results obtained point to the need to expand research on the creation of boundary objects, especially considering the students’ positive perception in respect of the triological position. These objects should make it possible to (a) bridge theory and practice by generating real-life experiences for students beyond work placement periods, and (b) to explore in greater depth, throughout their initial training period, the construction of their personal and professional identity. Furthermore, and following Paavola and Hakkarainen’s design principles of TLA [40], it would be interesting to combine the creation of boundary objects with reflective learning strategies that foster inquiry-based practices in the professional context such as the ones pointed out in Wegener’s study [13] that are aimed at making thought visible and avoid being overlooked, or even focus on analysing students’ learning mechanisms in boundary crossing [7] by looking at obstacles that students found [40] or giving pedagogical insights to activities [41] that could contribute to the WebQuest designs. This approach should provide students with sufficient criteria to judge the suitability of different actions and elements in their professional practice. It should also equip them to reflect systematically on this aspect [42].

**Supplementary Materials:** The questionnaire can be downloaded at <https://doi.org/10.5281/ZENODO.8144403> [43].

**Author Contributions:** Conceptualisation, M.F.-A. and N.M.-C.; methodology, M.J.R.H., F.M.-O., N.M.-C. and M.F.-A.; software, M.J.R.H. and F.M.-O.; validation, M.J.R.H. and F.M.-O.; formal analysis, M.J.R.H. and F.M.-O.; investigation, M.J.R.H., F.M.-O., N.M.-C. and M.F.-A.; resources, M.J.R.H. and F.M.-O.; data curation, F.M.-O.; writing—original draft preparation, M.F.-A., N.M.-C., M.J.R.H. and F.M.-O.; writing—review and editing, M.F.-A., N.M.-C., M.J.R.H. and F.M.-O.; visualisation, M.F.-A., N.M.-C., M.J.R.H. and F.M.-O.; supervision, M.F.-A., N.M.-C., M.J.R.H. and F.M.-O.; project administration, M.F.-A.; funding acquisition, M.F.-A., N.M.-C., M.J.R.H. and F.M.-O. All authors have read and agreed to the published version of the manuscript.

**Funding:** Grant PID2019-108924GB-I00 funded by MCIN/AEI/ 10.13039/501100011033.

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** Research data can be downloaded at <https://doi.org/10.34810/data768> (accessed on 11 September 2023) [44].

**Conflicts of Interest:** The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

## References

1. Amador, L.V.; Esteban, M.; Cárdenas, M.R.; Terrón, M.T. Ámbitos de profesionalización del educador/a social: Perspectivas y complejidad. *Rev. Humanid.* **2014**, *21*, 51–70. [CrossRef]
2. Eslava, M.D.; de León, C.; González, I. La profesio de l'educació social a Espanya. *Educ. Social. Rev. D'intervenció Socioeducativa* **2020**, *76*, 109–128. [CrossRef]
3. Gómez Sánchez, T.F.; Rumbo Arcas, B. Valoración de las competencias de la titulación de Educación Social para la inserción laboral [Social Education Degree competencies' appraisal for employability]. *ENSAYOS Rev. Fac. Educ. Albacete* **2020**, *34*, 1–17.
4. Ruiz-Corbella, M.; Bautista-Cerro Ruiz, M.J.; García-Blanco, M. Prácticas profesionales y la formación en competencias para la empleabilidad. *Context. Educativos. Rev. Educ.* **2019**, *23*, 65–82. [CrossRef]
5. Eslava Suanes, M.D. El perfil competencial del educador o educadora social en el punto de mira: ¿Qué formación para qué profesional? In *Creando Redes Doctorales. Vol. VI: La Generación del Conocimiento*; Chica, A.F., Pérez, J., García, M., Eds.; UCO Press: Córdoba, Spain, 2018; Volume VI, pp. 409–412. Available online: <https://www.researchgate.net/publication/322635815> (accessed on 1 May 2022).
6. Mora-Jauregui, B.; Triviño-García, M.A.; García-Rojas, A.D. Aproximación formativa a las prácticas de Educación Social desde la reflexión. *Rev. Pract.* **2022**, *7*, 45–59. [CrossRef]
7. Akkerman, S.; Bakker, A. Boundary crossing and boundary objects. *Rev. Educ. Res.* **2011**, *81*, 131–169. [CrossRef]
8. Bronkhorst, L.H.; Akkerman, S.F. At the boundary of school: Continuity and discontinuity in learning across contexts. *Educ. Res. Rev.* **2016**, *19*, 18–35. [CrossRef]
9. Cattaruzza, E.; Kloetzer, L.; Iannacone, A. Boundary-crossing movements: A resource for student learning. *Front. Educ.* **2022**, *7*, 1–10. [CrossRef]
10. Tuomi-Gröhn, T.; Engeström, Y. (Eds.) *Between School and Work. New Perspectives on Transfer and Boundary-Crossing*; Emerald Group Publishing: Bingley, UK, 2003.
11. Harfitt, G.J.; Chow, J.M.L. Transforming traditional models of initial teacher education through a mandatory experiential learning programme. *Teach. Teach. Educ.* **2018**, *73*, 120–129. [CrossRef]
12. Moore, D.T. Forms and issues in experiential learning. *New Dir. Teach. Learn.* **2010**, *124*, 3–13. [CrossRef]
13. Wegener, C. A situated approach to VET students' reflection processes across boundaries. *J. Educ. Work.* **2014**, *27*, 454–473. [CrossRef]
14. Stoffels, M.; van der Burgt, S.M.E.; Bronkhorst, L.H.; Daelmans, H.E.M.; Peerdeman, S.M.; Kusrkar, R.A. Learning in and across communities of practice: Health professions education students' learning from boundary crossing. *Adv. Health Sci. Educ.* **2022**, *27*, 1423–1441. [CrossRef] [PubMed]
15. Leung, A. Boundary crossing pedagogy in STEM education. *Int. J. STEM Educ.* **2020**, *7*, 15. [CrossRef]
16. Mattar, J. Constructivism and Connectivism in Education Technology: Active, Situated, Authentic, Experiential, and Anchored Learning. *RIED Rev. Iberoamericana Educ. A Distancia* **2018**, *21*, 201–217. [CrossRef]
17. Lave, J.; Wenger, E. *Situated Learning: Legitimate Peripheral Participation*; Cambridge University Press: Cambridge, UK, 1991.
18. Wenger, E. *Communities of Practice, Learning, Meaning and Identity*; Cambridge University Press: Cambridge, UK, 1998.
19. Fajardo, A.B.; Shultz, C.; Joya, J.C.M. Entrepreneurship as Boundary Object: Toward Reintegration of Colombia's Ex-Militants into Civil Society. *J. Macromarketing* **2019**, *39*, 368–384. [CrossRef]
20. Amenduni, F.; Ligorio, M.B. Becoming at the borders: The role of positioning in boundary-crossing between university and workplace. *Cult.-Hist. Psychol.* **2017**, *13*, 89–104.
21. Star, S.; Griesemer, J. Institutional Ecology, 'Translations' and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907–1939. *Soc. Stud. Sci.* **1989**, *19*, 387–420. [CrossRef]
22. Star, S.L. The Structure of Ill-Structured Solutions: Boundary Objects and Heterogeneous Distributed Problem Solving. In *Distributed Artificial Intelligence*; Gasser, L., Huhns, M.N., Eds.; Pitman: London, UK, 1989; Volume II, pp. 37–54.
23. Star, S.L. This is Not a Boundary Object: Reflections on the Origin of a Concept. *Sci. Technol. Hum. Values* **2010**, *35*, 601–617. [CrossRef]
24. Pedaste, M.; Mäeots, M.; Siiman, L.A.; de Jong, T.; van Riesen, S.A.N.; Kamp, E.T.; Manoli, C.C.; Zacharia, Z.C.; Tsourlidaki, E. Phases of inquiry-based learning: Definitions and the inquiry cycle. *Educ. Res. Rev.* **2015**, *14*, 47–61. [CrossRef]
25. Edelson, D.C.; Gordin, D.N.; Pea, R.D. Addressing the challenges of inquiry-based learning through technology and curriculum design. *J. Learn. Sci.* **1999**, *8*, 391–450. [CrossRef]
26. March, T. The Learning Power of WebQuests. *Educ. Leadersh.* **2003**, *61*, 42–47.
27. Esteve, A.; Alsina, A. *Creando mi Profesión: Una Propuesta Para el Desarrollo del Profesorado*; Octaedro: Barcelona, Spain, 2010.
28. Hermans, H.J.M. The Dialogical Self in Education: Introduction. *J. Constr. Psychol.* **2013**, *26*, 81–89. [CrossRef]
29. Monereo, C.; Weise, C.; Álvarez, I.M. Cambiar la identidad docente en la Universidad: Formación basada en incidentes dramatizados. *Infanc. Aprendiz.* **2013**, *36*, 323–340. [CrossRef]
30. Paavola, S.; Hakkarainen, K. The knowledge creation metaphor—An emergent epistemological approach to learning. *Sci. Educ.* **2005**, *14*, 535–557. [CrossRef]
31. Hermans, H.J.M. Foreword by Hubert Hermans. *Quad. De Psicol.* **2020**, *22*, 1641. [CrossRef]
32. Kerby, D.S. The simple difference formula: An approach to teaching nonparametric correlation. *Compr. Psychol.* **2014**, *3*, 2165–2228. [CrossRef]

33. IBM Corp. *IBM SPSS Statistics for Windows, version 27.0*; IBM Corp: Armonk, NY, USA, 2020.
34. The Jamovi Project. Jamovi, version 2.3; Computer Software. 2022. Available online: <https://www.jamovi.org> (accessed on 25 April 2023).
35. Guba, E.G.; Lincoln, Y.S. Naturalistic and Rationalistic Enquiry. In *Educational Research, Methodology, and Measurement: An International Handbook*; Keeves, J.P., Ed.; Pergamon Press: Oxford, UK, 1997.
36. Vicerectorat de Recerca de la Universitat de Barcelona. *The University of Barcelona's Code of Conduct for Research Integrity*; Edicions de la Universitat de Barcelona: Barcelona, Spain, 2020. Available online: <http://hdl.handle.net/2445/166917> (accessed on 25 April 2023).
37. Membrive, A.; Silva, N.; Rochera, M.J.; Merino, I. Advancing the conceptualization of learning trajectories: A review of learning across contexts. *Learn. Cult. Soc. Interact.* **2022**, *37*, 100658. [[CrossRef](#)]
38. Paavola, S.; Hakkarainen, K. Trialogical approach for knowledge creation. In *Knowledge Creation in Education—Education Innovation Series*; Tan, S., So, H., Yeo, J., Eds.; Springer: Berlin/Heidelberg, Germany, 2014; pp. 53–73. [[CrossRef](#)]
39. Sansone, N.; Grion, V. The “Triological Learning & Assessment Approach”: Design principles for higher education. *Qwerty-Open Interdiscip. J. Technol. Cult. Educ.* **2022**, *17*, 10–28.
40. Mesker, P.; Wassink, H.; Akkerman, S.; Bakker, C. Differences that matter: Boundary experiences in student teachers’ intercultural learning. *Int. J. Intercult. Relat.* **2018**, *64*, 54–66. [[CrossRef](#)]
41. Vuojärvi, H.; Vartiainen, H.; Eriksson, M.; Ratinen, I.; Saramäki, K.; Torssonen, P.; Vanninen, P.; Pöllänen, S. Boundaries and boundary crossing in a multidisciplinary online higher education course on forest bioeconomy. *Teach. High. Educ.* **2022**, *15*, 954. [[CrossRef](#)]
42. Korthagen, F.A. *Linking Practice and Theory: The Pedagogy of Realistic Teacher Education*; Routledge: New York, NY, USA, 2001. [[CrossRef](#)]
43. Molas-Castells, N.; Fuertes-Alpiste, M. Qüestionari per a la Valoració de l’activitat de Webquest sobre l’alfabetització digital i la inclusió social (Questionnaire for the Evaluation of the WebQuest Activity on Digital Literacy and Social Inclusion). *Zenodo* **2023**. [[CrossRef](#)]
44. Martínez Olmo, F.; Fuertes i Alpiste, M.; Molas Castells, N.; Rubio Hurtado, M.J. Dades corresponents a la valoració de l’activitat de Webquest sobre l’alfabetització digital (Data Corresponding to the Evaluation of the WebQuest Activity on Digital Literacy) (Version V1) [Data set]. *CORA Repositori de Dades de Recerca* **2022**. [[CrossRef](#)]

**Disclaimer/Publisher’s Note:** The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.